HARRIS, WILTSHIRE & GRANNIS LLP

1200 EIGHTEENTH STREET, NW
WASHINGTON, DC 20036

TEL 202.730.1300 FAX 202.730.1301
WWW.HARRISWILTSHIRE.COM

ATTORNEYS AT LAW

February 5, 2006

Via Electronic Filing

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Notice of Ex Parte Meeting, ET Docket Nos. 04-186, 02-380

Dear Ms. Dortch:

On February 2, 2007, on behalf of a coalition which includes Dell, Google, Hewlett-Packard, Intel, Microsoft, and Philips, I met with Julius Knapp, Alan Stillwell, Bruce Romano, Geri Matise, Ron Chase, Ahmed Lahjouji, Saurbh Chhabra, Rashmi Doshi, William Hurst, Steven Jones, and Steven Martin of the OET staff. During this meeting, we discussed the operating parameters for the prototype device that the coalition will submit to the FCC for testing pursuant to the OET's request. We also discussed the coalition's answers to questions posed by Steven Martin in an e-mail dated January 25, 2007. Copies of these answers are attached hereto.

Pursuant to the Commission's rules, an electronic copy of this notice is being filed electronically in the above-referenced dockets. If you require any additional information please contact me at (202) 730-1305.

Sincerely yours,

Edmond Thomas
Senior Policy Advisor

cc: Julius Knapp (*via e-mail*)
Rashmi Doshi (*via e-mail*)

FCC engineer's Questions and Microsoft Answers:

Contact: Srihari Narlanka (425- 703-8661)

1. User-specified transmission. Test modes enabling the operator to force transmission at maximum power with near 100 percent duty factor on any operator-specified TV channel within the intended operating channel range of the device would simplify testing of emission characteristics and of interference effects under maximum power conditions.
We will provide.

2. User-specified initial channel for normal operation. Operator ability to specify an initial operating channel for "normal" operation would facilitate tests of the ability of the device to vacate a channel if a DTV or microphone signal appears on that channel during operation.
We will provide.

3. User-specified sense channels. The following capabilities would facilitate tests in which a signal representing a licensed device (DTV or wireless microphone) is placed on a given TV channel and is adjusted in level to determine the sense threshold of the prototype device. (a) Enable the operator to specify an arbitrary TV channel within the operating capabilities of the device to be sensed for the presence of a DTV or wireless microphone signal; (b) provide an indication of the results of such sensing, and (c) provide a means to restart the sensing process. The intent of user-specified sense channels is to ensure that sensing is performed on the channel being tested. (It is assumed that in normal operation, a device may search a range of channels to locate one or more vacant channels for initial operation or as alternative channels to switch to in the event that the currently used channel(s) becomes occupied by a licensed device. If the search were to automatically terminate after a sufficient number of vacant channels were found, the search might never include the channel in which sensing is to be tested.)
We comply with all requests.

4. Operation while sensing. If the device is intended to be capable of sensing in the current operating channel while transmitting on that channel or during short gaps between transmissions on that channel, will supplied test software allow sensing to be tested under such conditions? Similarly, if the device is intended to be capable of performing sensing on other TV channels while transmitting in the current operating channel or during short gaps between transmissions on the operating channel, will supplied test software allow sensing to be tested under such conditions?

This version of Cognitive Radio does not support concurrent sensing while transmitting.

5. Adapters and other accessories. Any connectors, adapters, or other accessories necessary to test the device should be included. If a prototype is intended to be representative of a Part 15 device-which normally requires either an integral antenna or a "unique connector" for the antenna port-any unique connectors required for testing should be supplied.

Microsoft will furnish all required adaptors, interconnecting cables and required accessories. All external RF bulkhead receptacles are standard SMA female.

Emission Characteristics:

1. What range of TV channels can device tune to? Channels 2 through 51 in 0.1 MHz increments.
2. What type of modulation does the device employ? BPSK and QPSK
3. Will modulation scheme utilize multiple carriers (e.g., OFDM)? OFDM
4. What other modulation types are likely? Multilevel QAM
5. What is the occupied (3-dB) bandwidth of the signal? 4.5 MHz
6. Are there plans to aggregate available channels for wider bandwidth? Not in this Prototype but it is something under consideration.

Listen-Before-Talk (LBT) and Dynamic Frequency Selection (DFS) Capabilities:

1. Is device capable of sensing DTV signals? Yes
2. Is device capable of sensing wireless microphone signals? Yes
3. Will device attempt to sense other incumbent signals (e.g., LPTV)? Yes
4. What signal characteristics are utilized for incumbent signal detection? Feature masks and signal threshold.
5. Will sensing occur while performing intended communications functions? No.
6. What action(s) will be taken when incumbent signal is detected? Move to a vacant channel or not transmit at all if one is not available..
7. Is detection algorithm based on a single device does it rely on cooperative sensing across a network of devices? No.
8. Does device incorporate geolocation/database functionality? No.

Test Facilitation:

1. What is intended end application of device? To provide consumer broadband access and networking.
2. Will device have an internal or external antenna? External wideband discone.
3. Is the antenna port accessible? Yes but not in the final product.
4. What are the characteristics associated with the antenna (gain and pattern)?

1. Antenna Gain: 2 dBi
2. Pattern: Omni-directional, Vertical polarization

5. Will operator be able to set parameters such as power, frequency (TV channel), duty factor, etc.? Yes. Typical parameter settings are: Power , Channel Frequency ,Scan 100MHz-700MHz, Frequency step size for Radio and scanner step size.

6. What type of environment sensing and avoidance algorithms are used?
   1. Automatic feature search and probabilistic scoring techniques for DTV, NTSC and wireless microphone like spectral features.
   2. Periodic rescanning, user settable, to recertify existing operating channels and ascertain available channels.

7. What specialized (unique) connectors, adaptors or other accessories are required to test the device and will they be provided?
   None, all are standard RF connectors

Cognitive Radio Test set-up:

The following diagram shows the various interface connections within the Cognitive Radio hardware

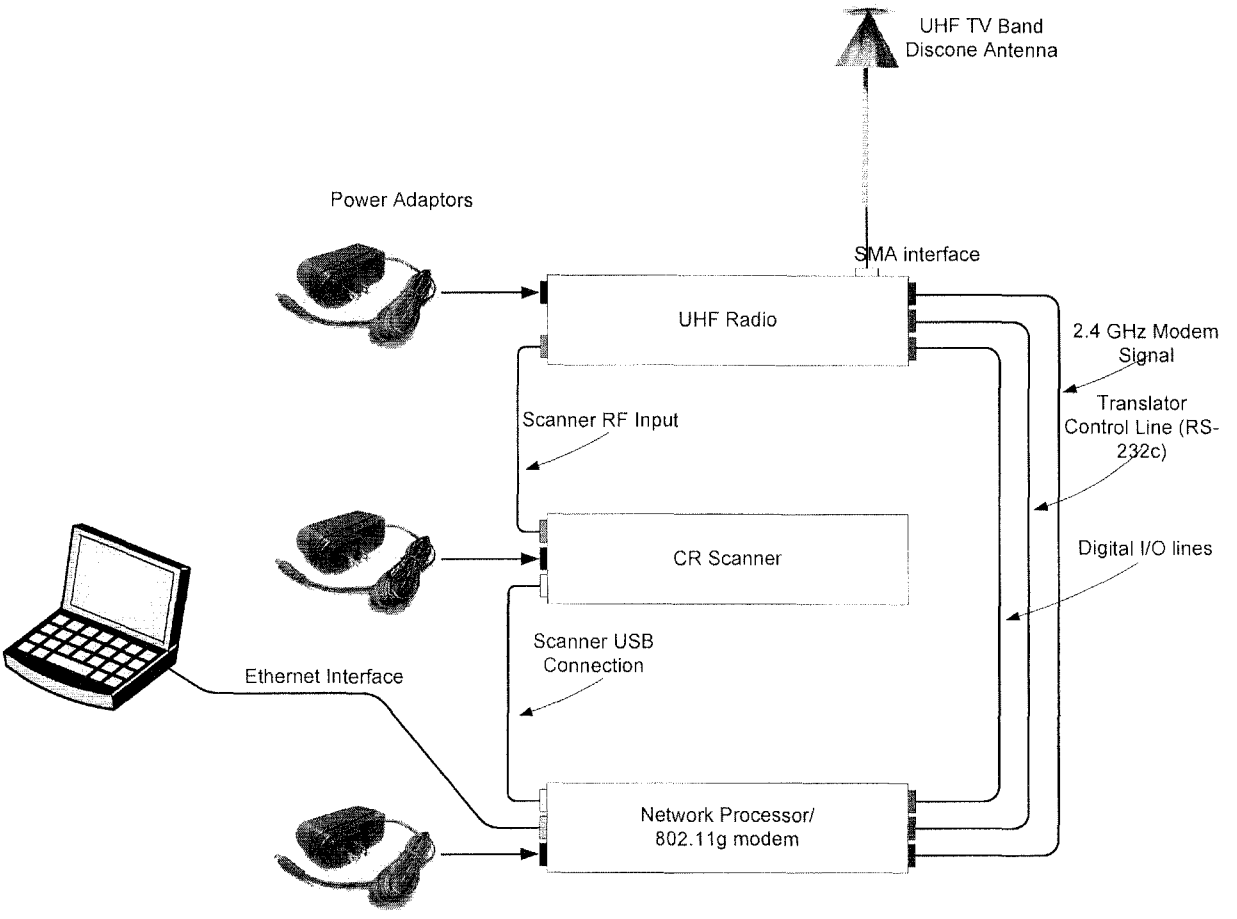

Fig: Cognitive radio test set -up